

PROTECT

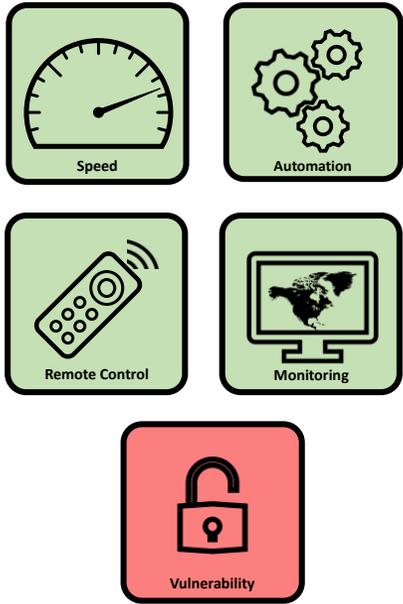
- Vorhersagemodell für die Auswirkungen von Cyberangriffen auf
Führungssysteme -

CODE Innovationskonferenz 2021

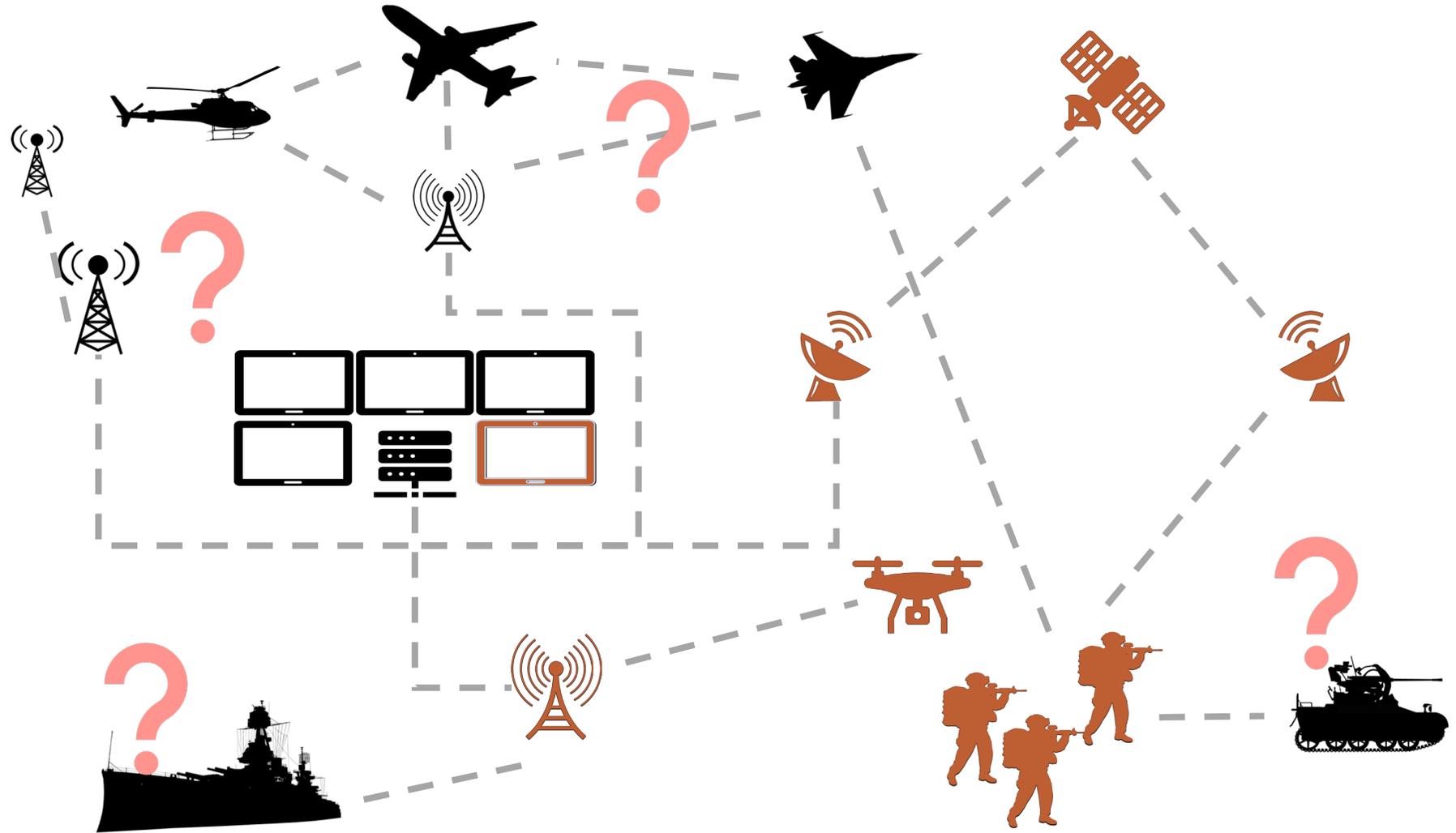


Erik Heiland, M. Sc.

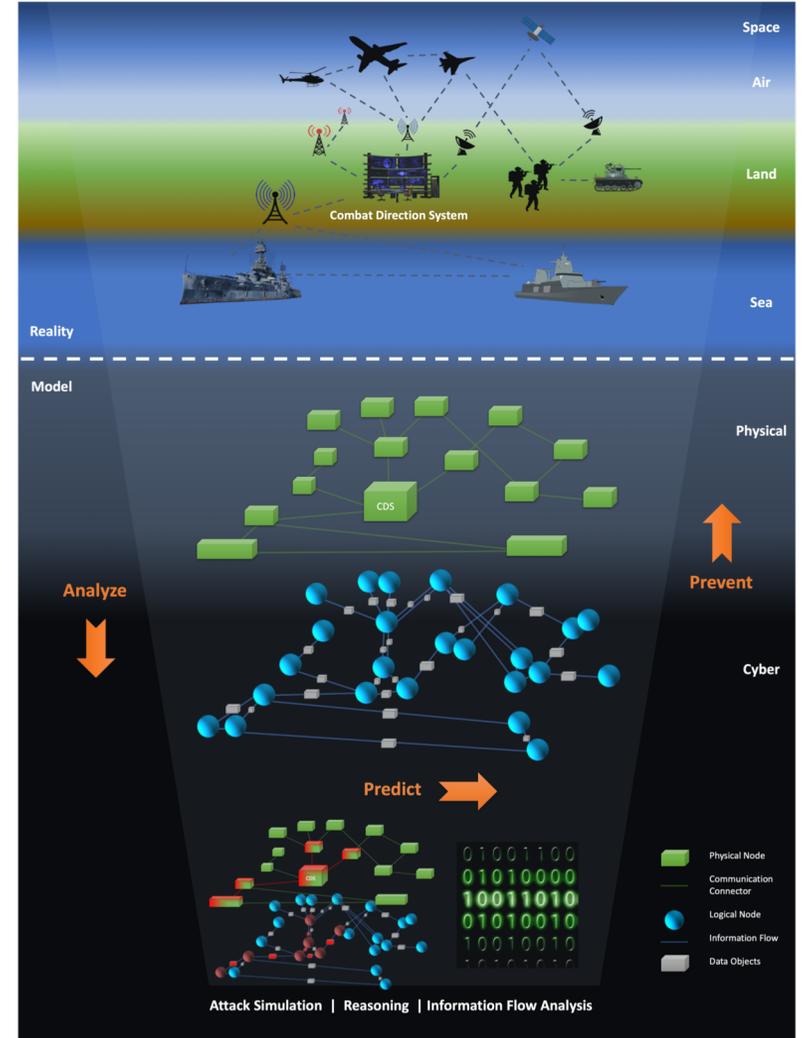
21.07.2021

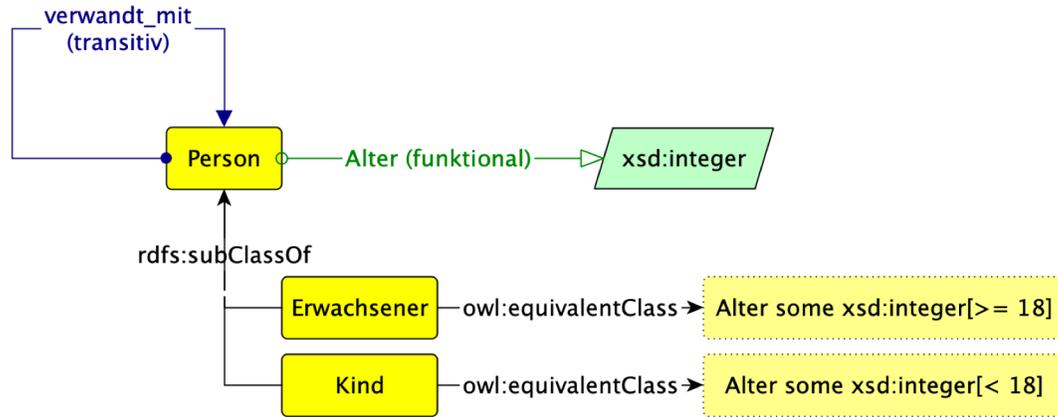


Proaktive
Schwachstellenanalyse
notwendig

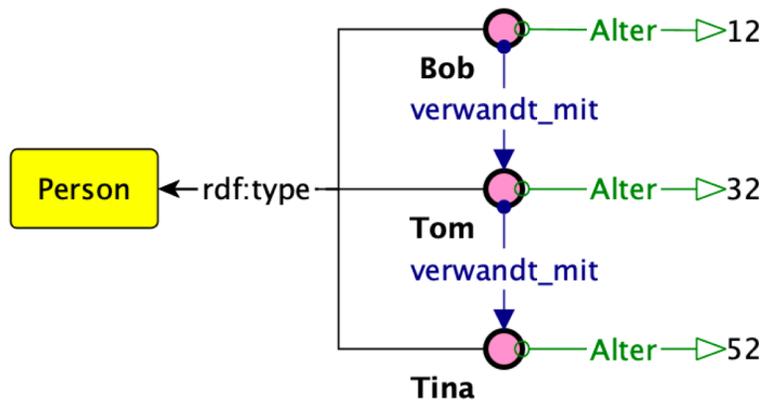
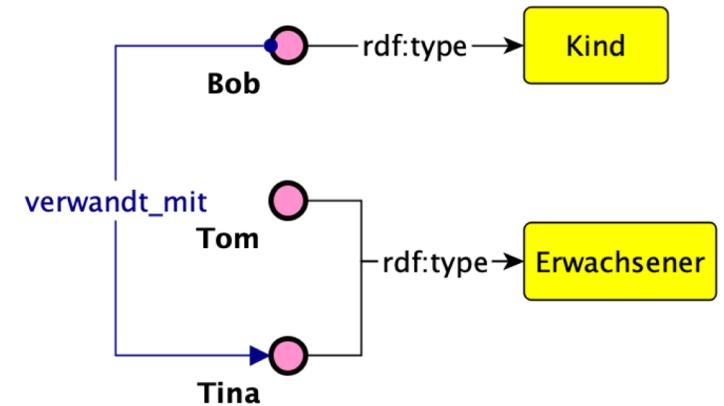


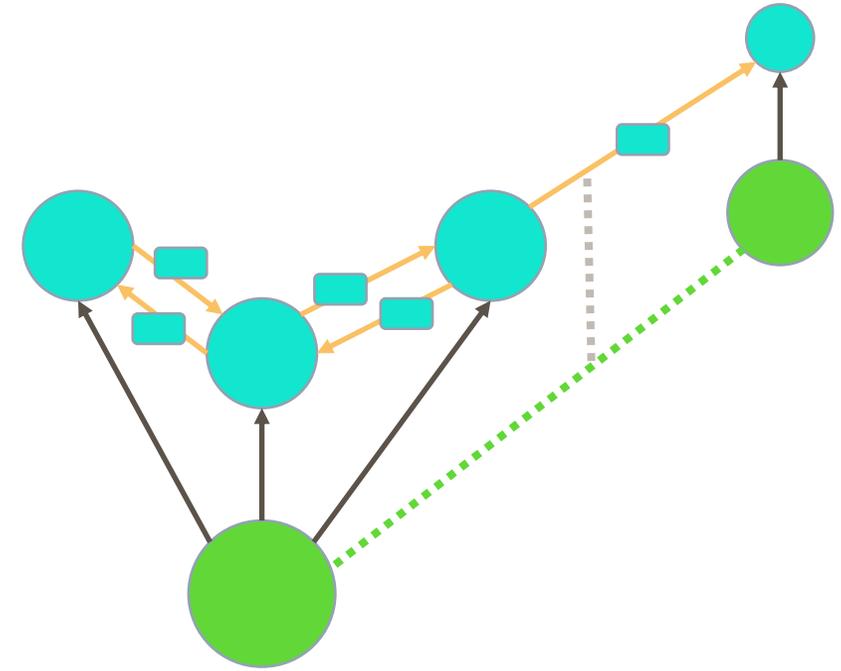
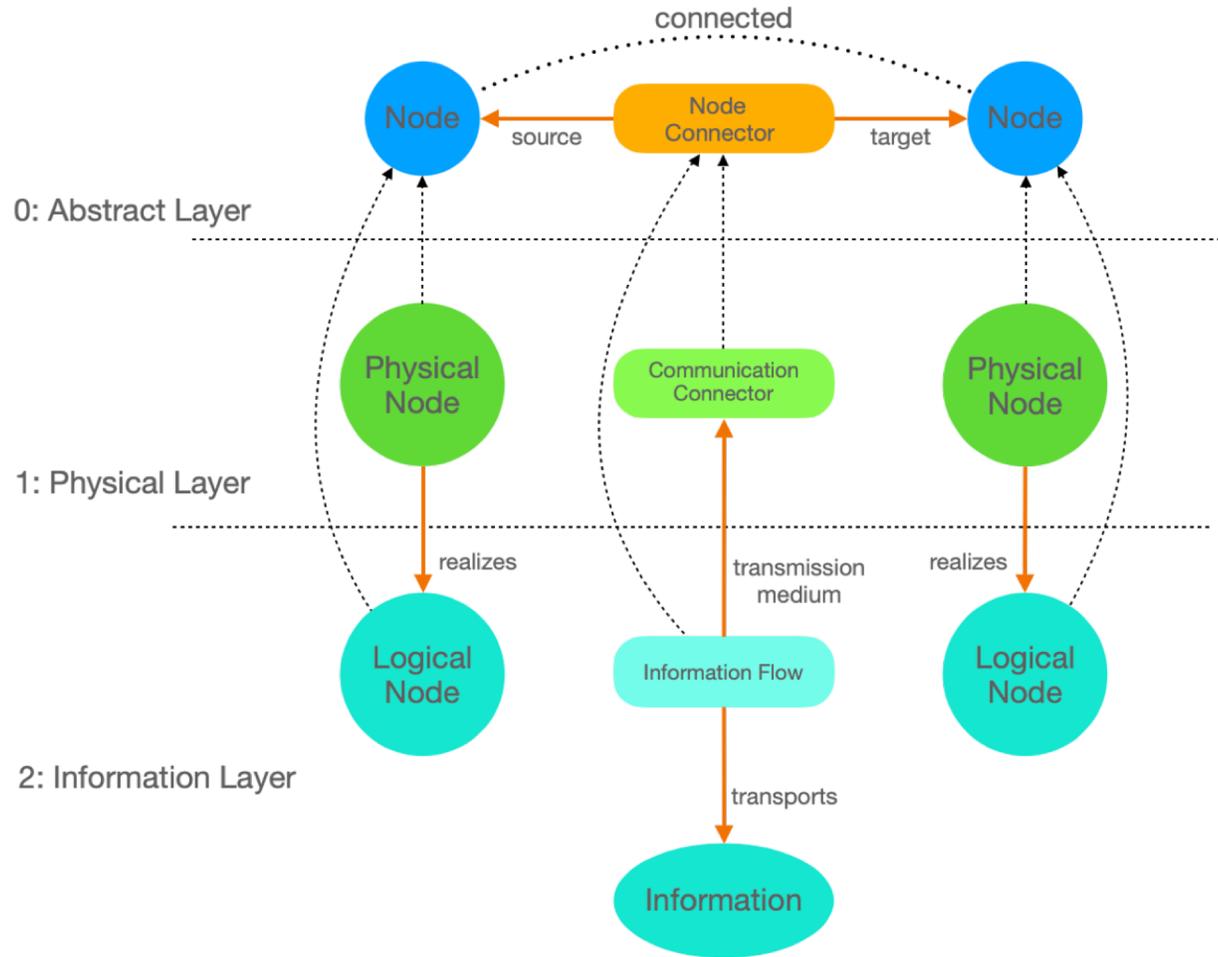
Ontologiebasiertes Simulationsmodell für die Vorhersage der Auswirkungen von Cyberangriffen auf Führungssysteme

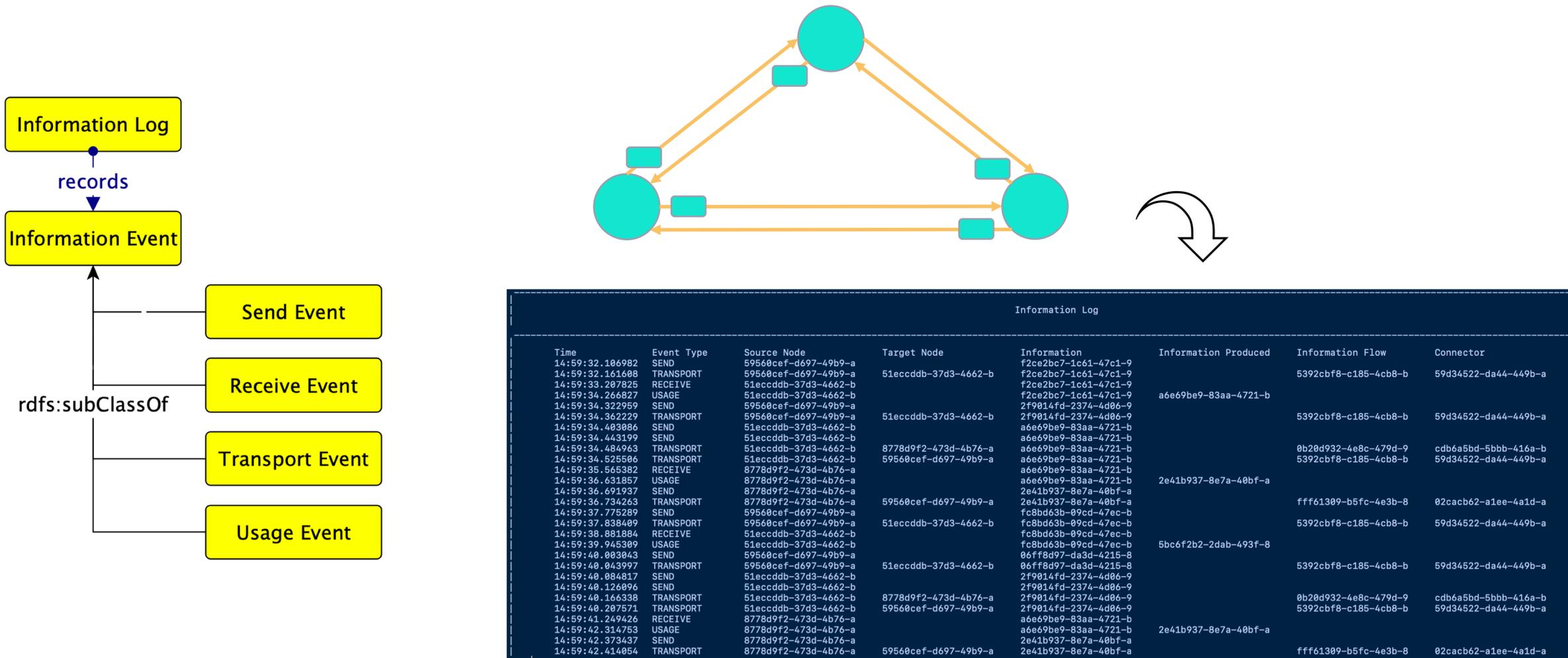


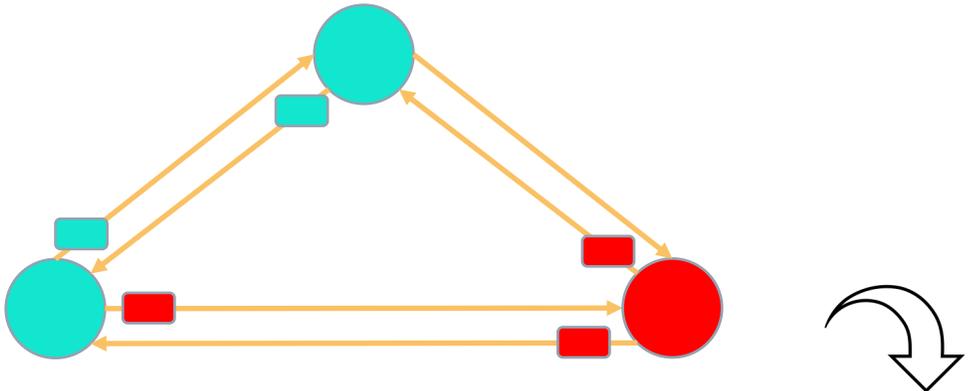
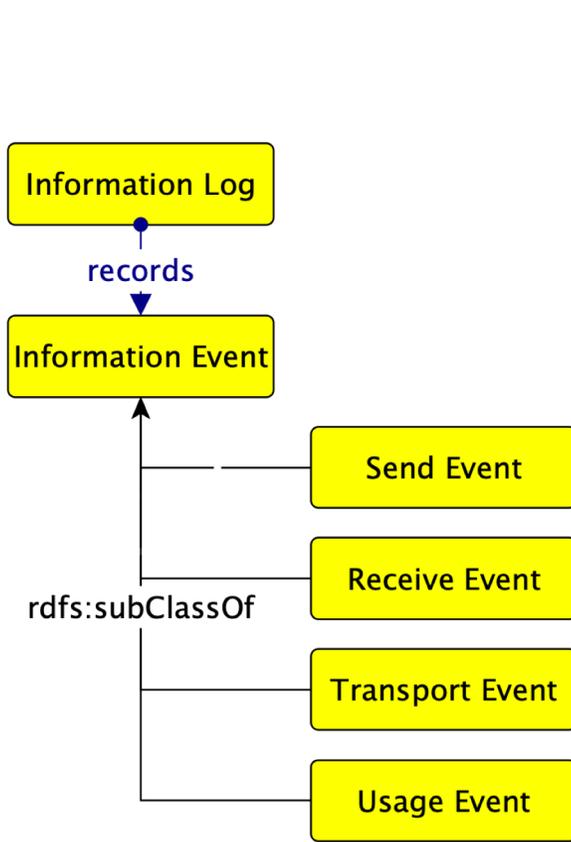


Reasoning



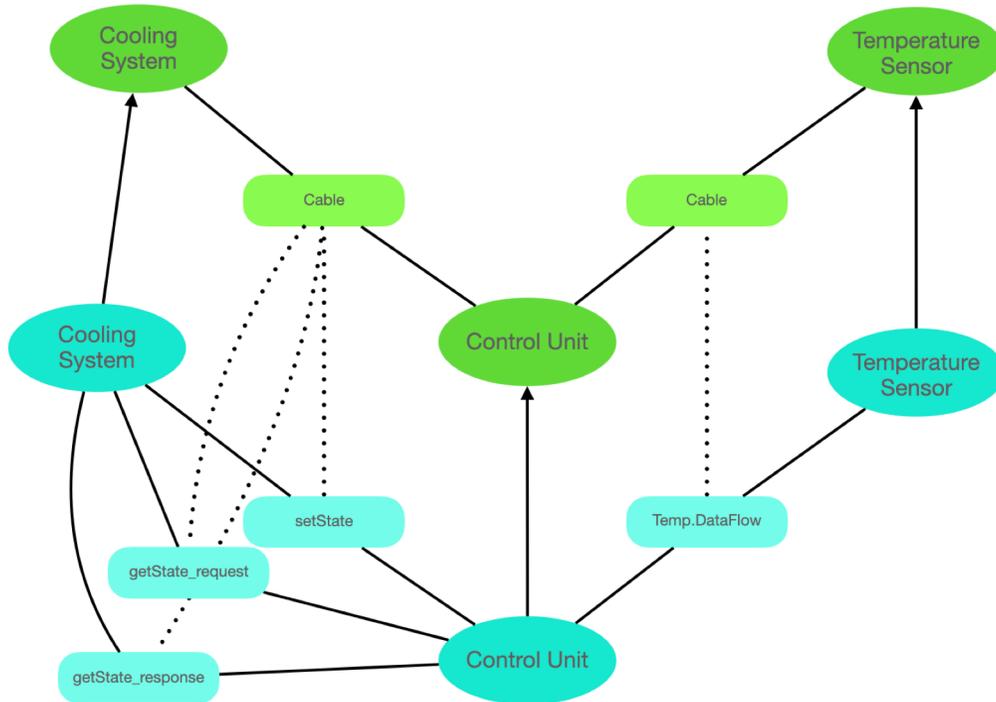






Information Log							
Time	Event Type	Source Node	Target Node	Information	Information Produced	Information Flow	Connector
14:59:32.106982	SEND	59560cef-d697-49b9-a		f2ce2bc7-1c61-47c1-9			
14:59:32.161608	TRANSPORT	59560cef-d697-49b9-a	51eccddb-37d3-4662-b	f2ce2bc7-1c61-47c1-9		5392cbf8-c185-4cb8-b	59d34522-da44-449b-a
14:59:33.207825	RECEIVE	51eccddb-37d3-4662-b		f2ce2bc7-1c61-47c1-9			
14:59:34.266827	USAGE	51eccddb-37d3-4662-b		f2ce2bc7-1c61-47c1-9	a6e69be9-83aa-4721-b		
14:59:34.322959	SEND	59560cef-d697-49b9-a		2f9014fd-2374-4d06-9			
14:59:34.362229	TRANSPORT	59560cef-d697-49b9-a	51eccddb-37d3-4662-b	2f9014fd-2374-4d06-9		5392cbf8-c185-4cb8-b	59d34522-da44-449b-a
14:59:34.403086	SEND	51eccddb-37d3-4662-b		2f9014fd-2374-4d06-9			
14:59:34.443199	SEND	51eccddb-37d3-4662-b		a6e69be9-83aa-4721-b			
14:59:34.484963	TRANSPORT	51eccddb-37d3-4662-b	8778d9f2-473d-4b76-a	a6e69be9-83aa-4721-b		0b20d932-4e8c-479d-9	cdb6a5bd-5bbb-416a-b
14:59:34.525506	TRANSPORT	51eccddb-37d3-4662-b	59560cef-d697-49b9-a	a6e69be9-83aa-4721-b		5392cbf8-c185-4cb8-b	59d34522-da44-449b-a
14:59:35.565382	RECEIVE	8778d9f2-473d-4b76-a		a6e69be9-83aa-4721-b			
14:59:36.631857	USAGE	8778d9f2-473d-4b76-a		a6e69be9-83aa-4721-b	2e41b937-8e7a-40bf-a		
14:59:36.691937	SEND	8778d9f2-473d-4b76-a		2e41b937-8e7a-40bf-a			
14:59:36.734263	TRANSPORT	8778d9f2-473d-4b76-a	59560cef-d697-49b9-a	2e41b937-8e7a-40bf-a			
14:59:37.775289	SEND	59560cef-d697-49b9-a		fc8bd63b-09cd-47ec-b			
14:59:37.838409	TRANSPORT	59560cef-d697-49b9-a	51eccddb-37d3-4662-b	fc8bd63b-09cd-47ec-b		5392cbf8-c185-4cb8-b	59d34522-da44-449b-a
14:59:38.881884	RECEIVE	51eccddb-37d3-4662-b		fc8bd63b-09cd-47ec-b			
14:59:39.945309	USAGE	51eccddb-37d3-4662-b		fc8bd63b-09cd-47ec-b	5bc6f2b2-2dab-493f-8		
14:59:40.003043	SEND	59560cef-d697-49b9-a		06ff8d97-da3d-4215-8			
14:59:40.043997	TRANSPORT	59560cef-d697-49b9-a	51eccddb-37d3-4662-b	06ff8d97-da3d-4215-8		5392cbf8-c185-4cb8-b	59d34522-da44-449b-a
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14:59:40.126096	SEND	51eccddb-37d3-4662-b		2f9014fd-2374-4d06-9			
14:59:40.166338	TRANSPORT	51eccddb-37d3-4662-b	8778d9f2-473d-4b76-a	2f9014fd-2374-4d06-9			
14:59:40.207571	TRANSPORT	51eccddb-37d3-4662-b	59560cef-d697-49b9-a	2f9014fd-2374-4d06-9		0b20d932-4e8c-479d-9	cdb6a5bd-5bbb-416a-b
14:59:41.249426	RECEIVE	8778d9f2-473d-4b76-a		a6e69be9-83aa-4721-b		5392cbf8-c185-4cb8-b	59d34522-da44-449b-a
14:59:42.314753	USAGE	8778d9f2-473d-4b76-a		a6e69be9-83aa-4721-b	2e41b937-8e7a-40bf-a		
14:59:42.373437	SEND	8778d9f2-473d-4b76-a		2e41b937-8e7a-40bf-a			
14:59:42.414054	TRANSPORT	8778d9f2-473d-4b76-a	59560cef-d697-49b9-a	2e41b937-8e7a-40bf-a		fff61309-b5fc-4e3b-8	02cacb62-a1ee-4a1d-a

Struktur



Verhalten

```

climate_control.py - /Users/Erik/Library/Mobile Documents/com~apple~Clo...
from owlready2 import *
import time

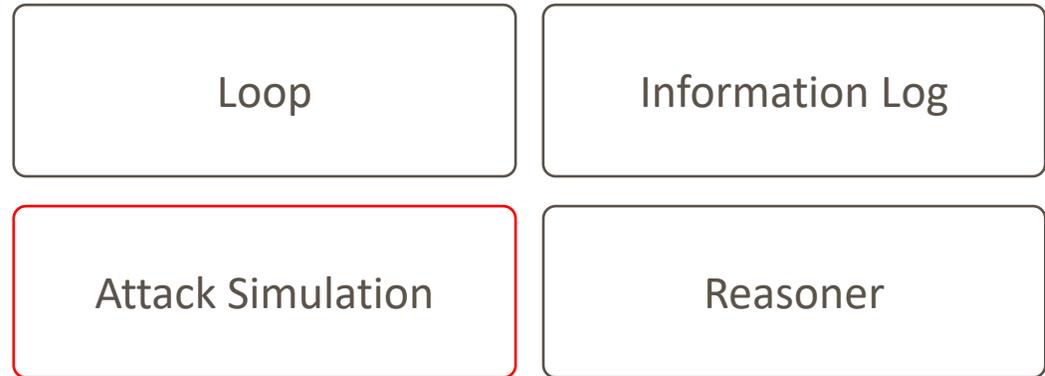
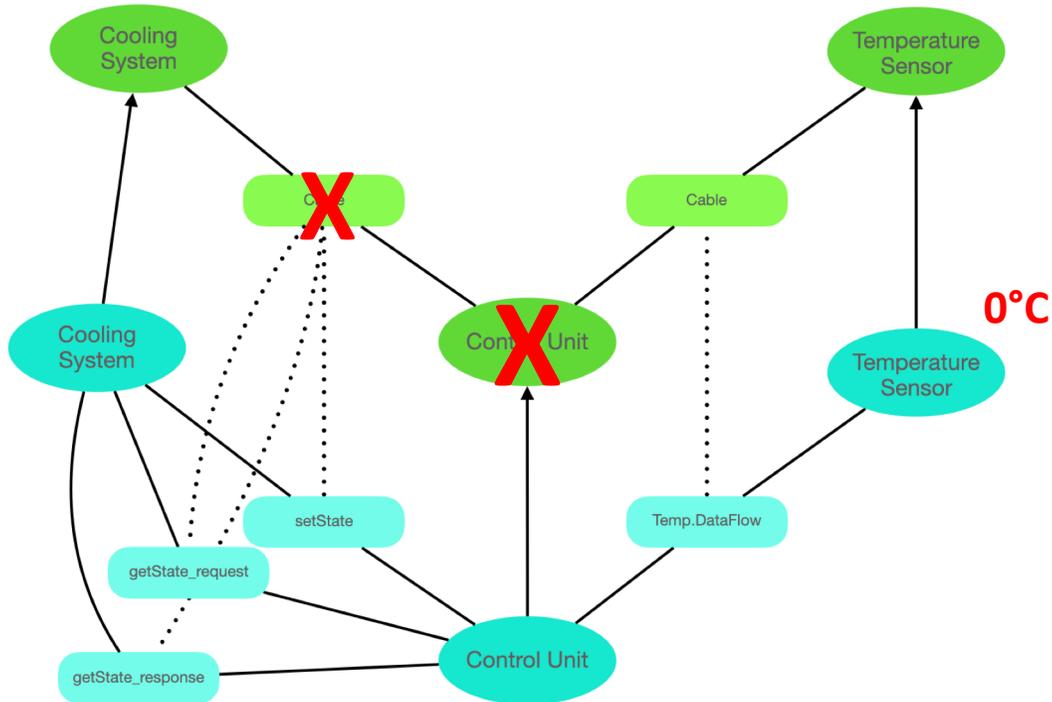
onto = get_ontology("https://code.unibw.de/climate_control.owl")

with onto:
    class Cooling_System(Logical_Node):
        def get_state(self):
            return self.state
        def set_state(self, state):
            self.state = state

    class Control_Unit(Logical_Node):
        def loop(self):
            while self.operating:
                temperature = self.sensor.get_temperature()
                if temperature != self.old_temperature:
                    new_state = calculate_state(self.old_temperature, temperature)
                    self.cooling_system.set_state(new_state)
                    time.sleep(10)

    class Temperature_Sensor
        def loop(self):
            while self.operating:
                self.temperature = read_temp()
                time.sleep(10)
        def get_temperature(self):
            return self.temperature
  
```

Ln: 29 Col: 8

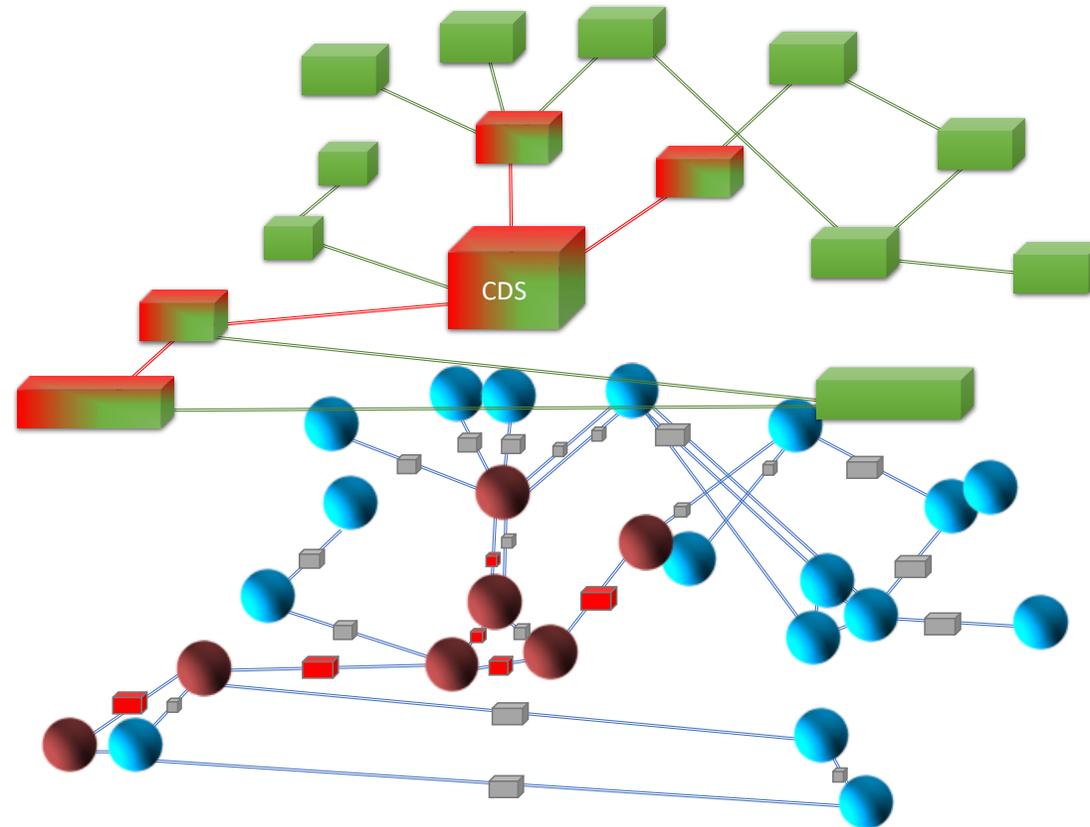


Proaktive
Schwachstellenanalyse

Präventiver
Systemschutz

Skalierbar &
Wiederverwendbar

Ausbaufähig



PROTECT

PRediction Of
Total Effects from
Cyber Threats



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